

SYSTEMS AND METHODS FOR DRIVING LARGE CAPACITY AC MOTORS

ABSTRACT OF DISCLOSURE

A drive system for driving large capacity motors includes a motor and a variable frequency drive which accepts input from a three-phase power source. The drive system includes a step-up transformer, preferably of a high-capacity three-phase type, positioned between and electrically connected to the motor and the variable frequency drive to thereby step-up voltage received from the variable frequency drive to be supplied to the motor. The transformer includes a transformer chamber formed in the transformer tank containing a cooling fluid for cooling transformer internal components. A plurality of inductors forming part of a harmonic filter are positioned within the transformer chamber such that they can be protected from the environment and simultaneously cooled with other transformer internal components by the dielectric fluid. The filter includes capacitors that are preferably mounted outside of the tank.

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